

*epi*TRENDS

A Monthly Bulletin on Epidemiology and Public Health Practice in Washington State

Summertime in Washington

Reports of enteric and zoonotic conditions tend to increase in summer months. Two different conditions have been prominent this year in Washington.

Vibriosis

Vibrio parahaemolyticus are bacteria occurring naturally in Pacific coastal waters, particularly during warmer months. Infections are characterized by one to three days of diarrhea, abdominal cramps, vomiting, fever, and chills. Persons with immune deficiency or chronic liver disease may have severe illness. Vibriosis is often associated with consuming raw or undercooked shellfish, with onset of symptoms about 24 hours (range 2 to 48 hours) after consumption.

From June through mid-August, 2006, Washington State Department of Health received over a hundred reports of *V. parahaemolyticus* infections, the highest number ever reported. For comparison, the state averaged 20 cases of vibriosis annually during 2000-2004. Other states also reported cases with consumption of shellfish from the Pacific Northwest. Unseasonably warm temperatures and afternoon low tides are thought to be major contributors to this outbreak.

Stool testing should be done for patients with acute gastroenteritis and a history of recent shellfish consumption. Request specific culture for *Vibrio* or vibriosis so that appropriate laboratory methods can be used. Report suspected or confirmed cases to local health jurisdictions: <http://www.doh.wa.gov/LHJMap/LHJMap.htm>

To decrease the risk for vibriosis or other infections, thoroughly cook shellfish (heat oysters to 145° F) and avoid contaminating other food with raw shellfish or their juices. Cooking guidelines vary for each type of shellfish and are available from FDA at <http://www.cfsan.fda.gov/~lrd/seafsafe.html> or by telephone (888-723-3366).

Some shellfish harvest areas in Washington have been closed as a result of implicated product. Oysters from these areas have been recalled by Washington state shellfish-control authorities. Because vibrios multiply rapidly, even low levels of *V. parahaemolyticus* can rapidly increase to infectious levels if products are not maintained at proper temperatures during transport, processing, and storage (i.e., <50°F [$<10^{\circ}\text{C}$]).

Updates on closures of recreational beaches and commercial growing areas can be found under News items on the agency's Web site at:

<http://www.doh.wa.gov/>

Information about vibriosis is available at:

<http://www.doh.wa.gov/ehp/sf/Pubs/Vibriosis.htm>

A report of the outbreak is available at:

<http://www.cdc.gov/mmwr/preview/mmwrhtml/mm55d807a1.htm>

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Continued page 2

Hantavirus Pulmonary Syndrome

Critical illness or death from a potentially infectious cause occurring in a previously healthy person aged 1 to 49 years is an immediately notifiable condition in Washington. Criteria are indicators of an infectious disease (fever, abnormal white blood cell count) that is severe enough to either require hospitalization or result in death, without identified etiology on initial testing performed at a hospital or commercial reference laboratory. These reports often bring cases of hantavirus pulmonary syndrome (HPS) to public health attention.

HPS is a rapidly fatal infection; infected persons often die within hours of being admitted into a hospital. Since its recognition in 1993, there have been 32 reported cases of HPS in Washington State (1-5 cases/year) with 11 (34%) associated deaths, similar to the national 35% fatality rate. Washington has the sixth highest number of cases in the United States after New Mexico, Arizona, Colorado, California and Texas.

Between January 1, 2006 and August 15, 2006, three cases of HPS were reported in Washington; two were fatal. Cases occurred in Whatcom, Yakima, and Okanogan counties. National data show an increase in HPS cases this year throughout the western United States.

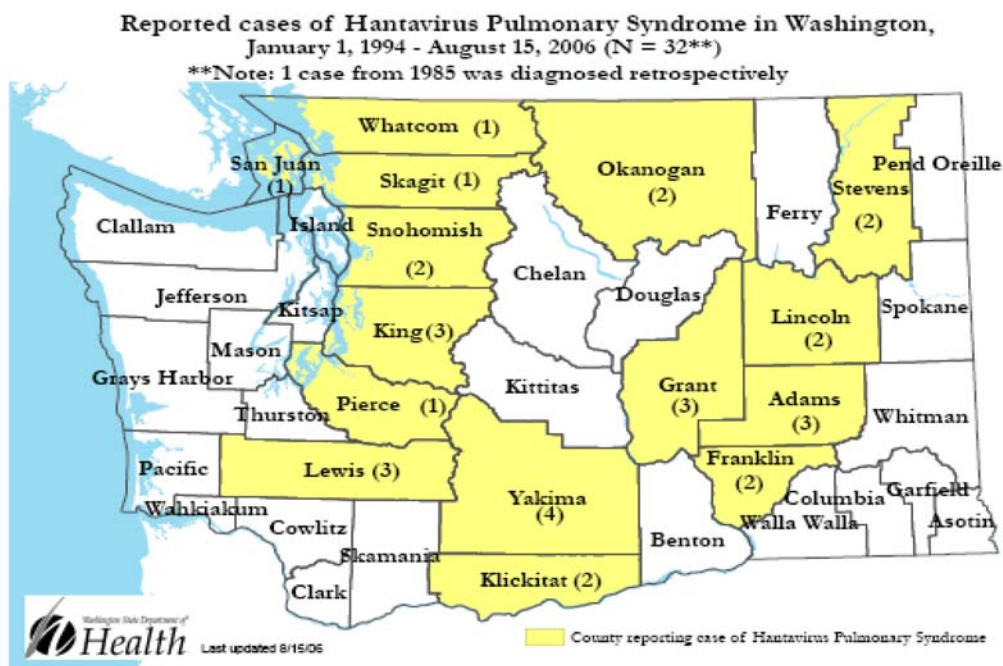
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HPS is caused by Sin Nombre virus infection. The virus is carried by deer mice (*Peromyscus maniculatus*) which occur throughout Washington State. Exposure through inhalation results when people disturb rodent droppings or nests. Most exposures occur when people are cleaning, living, visiting or working in rodent infested buildings including homes, barns, and garages, particularly in rural areas. The mice are not ill. There are no available tests to determine if rodent droppings are infectious, or if a person has been exposed.

Epidemiology

HPS usually affects previously healthy adults. The median age of HPS cases in Washington State is 36 years old (range 19-75 years). Nationally there are more than 438 cases and a median age of 38 years (range 10-83 years). Hispanic ethnicity is about twice as common among Washington cases as compared to the total state population.

Clinical Disease

HPS develops 1 to 6 weeks after exposure to Sin Nombre virus. First symptoms are typically several days of flu-like illness (fever, muscles aches, headache, non-productive cough, fatigue) followed by rapidly progressive pulmonary edema (bilateral pulmonary infiltrates) and severe cardio-respiratory compromise. Thrombocytopenia, circulating immunoblasts (myelocytes), leukocytosis with a left shift, and hemoconcentration are characteristic laboratory findings. Serial monitoring of complete blood counts is recommended in suspected cases.

Diagnosis

Diagnosis of HPS involves detection of virus-specific IgM and IgG antibodies in serum with an ELISA test. Laboratory testing should be performed or confirmed at a reference laboratory, such as the Washington State Public Health Laboratories. Health care providers can contact the local health jurisdiction to arrange testing: <http://www.doh.wa.gov/LHJMap/LHJMap.htm>

Management

Although there is no specific treatment, almost all patients require hospitalization for pulmonary and hemodynamic support. Emergency room physicians and primary health care providers are encouraged to consider HPS in patients with the hallmark signs and symptoms and to report suspected cases immediately to their local health departments.

Treatment of patients with HPS remains supportive in nature. Antiviral medications have not been shown to be effective. If there is a high degree of suspicion of HPS, patients should be closely monitored. ICU management should include careful assessment, monitoring and adjustment of volume status and cardiac function, including inotropic and vasopressor support if needed. Fluids should be administered carefully due to the potential for capillary leakage. Supplemental oxygen should be administered if patients become hypoxic.

Prevention

- Keep rodents out of the home and workplace. Always take precautions when cleaning, sealing and trapping rodent-infested areas.
- Seal up cracks and gaps in buildings that are larger than 1/4 inch including: rodent entry holes, window and door sills, around pipes, and in foundations or attics.
- Trap indoor rats and mice with snap traps.
- Remove rodent food sources. Keep food (including pet food) in rodent proof containers.

Clean up

Clean up rodent infested areas:

- Wear rubber, latex, vinyl or nitrile gloves.
 - Do not stir up dust by vacuuming, sweeping, or any other means.
 - Thoroughly wet contaminated areas including trapped mice, droppings, nests with a bleach solution or household disinfectant. Hypochlorite (bleach) solution: Mix 1½ cups of household bleach in 1 gallon of water.
 - Once everything is soaked for 10 minutes, remove all of the nest material, mice or droppings with damp towel and then mop or sponge the area with bleach solution or household disinfectant.
 - Spray dead rodents with disinfectant and then double-bag along with all cleaning materials. Bury, burn, or discard in an appropriate waste disposal system.
 - Clean gloves with disinfectant or soap and water before taking them off.
 - After taking off the clean gloves, thoroughly wash hands with soap and water (or use a waterless alcohol-based hand rub when soap is not available).
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The Epi Road Show, Fall 2006

Each spring and fall, the DOH Communicable Disease Epidemiology Section holds its Epi Road Shows on both the east and west sides of the state. The Epi Road Shows are intended for communicable disease investigators, although other public health disciplines are welcome on a space available basis.

The schedule for the Fall 2006 Epi Road Shows is:

- Tuesday, September 19, 2006, at the Criminal Justice Training Center in Burien.
Deadline for registering is September 14th.
- Tuesday, September 26, 2006, at Big Bend Community College in Moses Lake.
Deadline for registering is September 21st.

To register, go to the Washington Public Health Training Network (WAPHTN) at:

<http://www3.doh.wa.gov/waphtn/class.asp>

Click on the Epi Road Show for the date you will attend, and follow the instructions to register. Advance registration is required.
